

CLAIMS:

1. A method of mitigating interference in a satellite user uplink signal of a satellite mobile communications system which comprises a plurality of non-geostationary orbiting satellites (4) each radiating a beam pattern of multiple beams, comprising:

providing overlapping coverage of a region of the Earth which is subject to interference at an interference frequency, by a first beam of a first satellite (4a) and at least a second beam of a second satellite (4b);

10 determining which of said first or said second beam is more peripheral within their respective satellite beam patterns; and

controlling communications on the more peripheral said beam to limit reception thereby at said interference frequency.

15 2. A method according to claim 1, further comprising:

maintaining data defining an interference region from which interference at said interference frequency may be transmitted.

20 3. A method according to claim 1, in which said data defines an interference area of the Earth.

4. A method according to claim 1, in which said data defines a position on the Earth of an interference source.
5. A method according to any of claims 2 to 4, further comprising:
periodically assessing those beams which overlap a said interference area.
6. A method according to any preceding claim, in which said step of controlling communications comprises not using the more peripheral said beam for new calls.
7. A method according to claim 6, in which said step of controlling communications comprises handing off current calls on channels which overlap said interference frequency.
8. A method according to any of claims 1 to 5, in which said step of controlling communications comprises reallocating communications channels between said beams such that frequencies of communications channels used to communicate via said more peripheral beam do not overlap said interference frequency.

15.02.01 ART 34 AMDT

24

9. Apparatus for mitigating interference of a user uplink signal in a satellite mobile communication system which comprises a plurality of non-geostationary orbiting satellites (4) each radiating a beam pattern of multiple beams, said apparatus comprising:

5 means for determining which of a first beam of a first satellite (4a) and at least a second beam of a second satellite (4b) providing overlapping multiple coverage of a region of the Earth, which is subject to interference at an interference frequency, is more peripheral within their respective satellite beam patterns; and

10 means for controlling communications on the more peripheral said beam to limit reception thereby at said interference frequency.

10. Apparatus according to claim 9, further comprising a store for storing data defining positions on the Earth where transmitters of said interference may be located, and means for determining when said first and second beams overlap said positions.

15. Apparatus according to claim 9 or 10 arranged to communicate with a terrestrial station (6) of said communication system.